White Paper on Sustainable CRFS

Published in November 2022

Key author(s)

Suzanne van Osch,

Stella Archontaki

(Institute for Environmental Studies (IVM), Amsterdam (the Netherlands)

Horizon 2020 funded project ID: 10100064

CO-CREATING RESILIENT AND SUSTAINABLE FOOD SYSTEMS TOWARDS FOOD2030

KEY MESSAGE

Recommendations to reach sustainability in CRFS are captured in five key points:

1. Focus on the City-level (a governance system that provides local actors with mandate to make changes at the city-region level)
2. Utilize a system thinking approach (focus on the CRFS as a whole, recognizing the interlinkages)
3. Increase system resilience (re-examining the evolving importance of food security, challenging context, health implications)
4. Stakeholder inclusion (particularly for food system resilience, ensuring food security for vulnerable groups, capacity building)
5. Integrate urban food system transformation into EU policies (assess integrated governance in other policy areas)

SUMMARY FOR POLICY MAKERS

This White Paper aims to provide insight into the current status of the sustainability of City Region Food Systems (CRFS). The paper reflects on the existing legislative framework of food systems on multiple levels of governance and assesses top-down and bottom-up approaches to food system governance. This will be reflected against the perspectives and actions from CRFS Living Labs across Europe to provide insights into dominant and successful approaches. These trends are juxtaposed with the scientific discourse and multilevel legislation and/or strategies to assess what type of action by which actor is most appropriate to reach food systems goals and lead to efficient outcomes.

The challenges associated with the current state of the food system stretch over multiple areas and include environmental issues (such as climate change, loss of biodiversity and ecosystem services), socio-economic issues (food prices, (un)healthy diets, market forces), ethical considerations (equality in access to healthy diets), cultural issues (protection of traditions) and system characteristics (system resilience). These elements interact and are in several places reinforcing. Responsibility is dispersed across several actors and levels, so addressing these issues has proven challenging. European food systems are considered unsustainable and vulnerable, unable to guarantee permanent and reliable access to adequate, safe, fair, and

This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement 101000348.

healthy food for all. Urbanisation and the diverse challenges that both urban and rural communities face call for a re-examination of the ways in which cities govern their CRFS.

Addressing CRFS sustainability challenges takes place across governance levels and actors. Assessment of the policy landscape leads to conclude that the EU may well be an appropriate actor and a well-suited level to stimulating CRFS governance. Its position outside the nation-state legislation allows for a European wide approach rather than the collection of fragmented national approaches. The need to develop integrated food policies and cross-sectoral approaches is increasingly emphasised in both (local) policy environments and academia and can be a leverage point for increasing the sustainability of European City Region Food Systems.

Lessons from CRFS Living Labs are drawn from Cities2030 Living Labs across various European city regions and their experiences in transforming CRFS. The experiences of the 13 living labs from Cities2030 are collected through in-depth interviews. The activities of these Living Labs are assessed on policy type and governance landscape. Issues of particular interest are identified as (1) priority setting in sustainable CRFS, (2) the role of policy in sustainable CRFS, and (3) the division of local vs. national vs. international mandate and their effectiveness.

1. Introduction

This White Paper sets out a sustainable development path for City Region Food Systems (CRFS) to inform EU actions addressing food system sustainability. The paper assesses current policy responses and builds on experiences from policy labs and Living labs in city-regions across Europe to inform sustainable transformations in CRFS.

1.1 The current state of European food systems

The European food system in its current form is deemed unsustainable. Food systems have strong links to the agricultural sector, which primarily consists of intensive agriculture and is responsible for up to 30% of global GHG emissions, water pollution, deforestation, biodiversity loss, and soil degradation[1]. Additionally, food systems are linked to unhealthy diets and human health problems[2]. Scientific discourse presents strong indications that modern European food systems are insufficiently resilient to adequately withstand system shocks [3]. Such food system vulnerability has been exposed by the COVID-19 pandemic[4]. Urbanisation is foreseen to continue increasing, with 70% of the population living in urban lands by 2050. Urbanisation contributes to the competition for land and stimulates industrial agriculture methods that negatively impact food sustainability[5] [6].

Governance of food systems is limited, especially at the local and impactful city-level. European food governance does not focus on systems but instead has a fragmented and disconnected approach to food system governance which has led to a concentration of power in the hands of market actors. This increases the exposure of food systems to market and price volatility, as food supply chains are heavily influenced by market consolidation, integrated agri-business and concentration of power of food retailers, while systematically generating hidden costs or

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'externalities'[1]. This lack of consolidated system governance does not address system shocks and the impact of the food system on the environment, economy, and social elements. As a result, CRFS are to a large extent governed by market forces and not adequately resilient to external system shocks.

Why we need a fundamental change in EU urban food systems

European food systems are environmentally unsustainable

The agricultural sector has a high environmental impact through intense land and water use and contributes to eutrophication[1]. Additionally, food waste remains an issue in European food systems with estimations of approximately 88 Mt per year[7].

The impact of the European food system is concentrated in urban regions

Urbanisation is expected to continue across Europe over the next decades. This process entails increased competition for land and leads to the centralization of demand to the food system and the resulting environmental impact.

European food systems are linked to the health of inhabitants

Unhealthy diets are the leading risk factor for disease and mortality in Europe, which can negatively impact life expectancy and quality of life[3]. Obesity rates are currently at 20% of the European population and this is rising particularly among children[8]. Simultaneously, food insecurity persists in the EU, driving inequality in food access.

European food system is not resilient to shocks

The COVID-19 pandemic exposed the vulnerability of the European food systems, particularly by highlighting the dependence within the food system on various actors and segments. System shocks disproportionally affect the most vulnerable and marginalised populations within Europe.

EU urban food systems remain largely under governed

CRFS are to a large extent governed by market forces and urban regions hold little mandate, causing little to no governance of EU urban food systems at a local level.

Local food cultures are under pressure

The erosion of traditional food cultures and the emergence of fast-paced urban lifestyles have also transformed European diets, disconnecting people from topical food traditions, food cultures, and food seasonality.

1.2 City Region Food Systems & Sustainability

The concept of food systems supports a holistic understanding of a multi-layered system that consists of overlapping subsystems on the global, national and regional levels. Food systems include multiple direct and indirect links among a plethora of actors. Sustainable food systems can be regarded as a food system that delivers food security and nutrition for a given population while balancing the economic, social, and environmental sustainability of the food system[9]. The

[1] Retail prices that don't reflect the true environmental and social costs

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majority of Europeans live in medium-sized cities[2], which makes medium-sized cities and city-regions the optimal territory for urban experimentation and food policy innovation[10].

The concept of City Region Food Systems (CRFS) can be described as "the complex network of actors, processes and relationships to do with food production, processing, marketing, and consumption that exist in a given geographical region"[11]. Applying the CRFS approach (a) provides a system thinking approach; (b) facilitates cities with ways to tailor their local challenges and contexts with place-specific actions; (c) supports and stimulates the involvement of citizens and local stakeholders in sustainable operations by enabling democratic and bottom-up governance approaches, encouraging citizen and entrepreneurial initiatives at the local level. The CRFS approach has the potential to bring more food resilience and food security at the city-level[12] .

2. Addressing CRFS Sustainability Challenges

2.1 EU Policy addressing CRFS Sustainability

The foundation of EU food governance is laid down by the General Food Law Regulation (2002), followed by adaptations to the Common Agricultural Policy (CAP), the Common Fisheries Policy, and the EU Food Policy. In recent years EU food system governance increasingly includes environmental aspects; through the umbrella policy framework of the EU Green Deal, particularly the Farm-to-Fork strategy (F2F)[13], the Circular Economy Action Plan (CEAP)[14] and the EU Biodiversity strategy[6]. The F2F contributes to food policy integration and adopts a food systems approach along the entire food chain. The Food2030 Action Plan recognises the potential of cities and communities to drive change in food systems.

Sustainable food production

Sustainable agriculture is stimulated within the F2F Strategy; it promotes the uptake of organic agriculture and sustainable business models, yet does not specify concrete support for local food production and agroecology. Within the EU framework, the EU Food2030 Pathway for Action includes several aspects of CRFS, including examples of shorter food supply chains, closer relationships between consumer-producers, and new production forms (e.g., urban vertical farming). Also, the EU Biodiversity Strategy stresses the importance of urban green spaces, including urban farms, to boost local biodiversity.

Sustainable processing & distribution

The food and retail sectors are recognised within F2F as key actors to increase the affordability and accessibility of healthy food. An EU Code of conduct is planned to be developed to stimulate corporate responsibility and marketing practice. The potential of short supply chains and local initiatives is recognised and supported[3], being mentioned in F2F and their importance is further stressed by the FAO Urban Food Agenda.

[2] cities with a population between 250 thousand and 5 million inhabitants

[3] European Regulation n.807/2014

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Food security & consumption

Food insecurity is addressed primarily through national governments and additionally by multiple tools at the EU level including the Fund for European Aid to the Most Deprived (FEAD). In reaction to increasing food insecurity during the COVID-19 pandemic, a contingency plan is developed under F2F to ensure food security and boost the social sustainability of CRFS in times of crisis. A range of strategies has been initiated at the EU and national levels to promote healthy diets and extend the EU Food Safety policy. Prioritisation areas include (a) reversing obesity and overweight across Europe by providing clear nutritional information to consumers through a sustainable labelling framework and tax incentives; (b) the development of minimum mandatory criteria for sustainable food procurement; (c) the promotion of plant-based diets.

Food waste

A baseline for food waste is being developed at the EU level, following the commitment to half per capita food waste at the retail and consumer level by 2030, by proposing legally binding targets to reduce food waste across the EU. The Circular Economy EU Strategy assists the proposed targets, although additional policies related to food donation and food repurposing activities would further support this target. Additionally, the importance of circular bioeconomy is stressed by the FAO Framework for the Urban Agenda (2019).

2.2 Bottom-up responses

Bottom-up responses to food sustainability challenges can be considered an alternative to conventional food system activities. Whereas conventional food systems are characterised by global relations and industrialised processes, local responses are increasing across Europe. These local activities consist of alternative forms of food production, processing, selling and consumption that are initiated by farmers, rural/urban communities and citizen organisations in a collective effort to build sustainable CRFS and shorten the supply chain. Examples are Community Supported Agriculture (CSA)[4], farmer's markets and food cooperatives.

Bottom-up responses primarily aim for sustainable food system transformation and advocate for healthy diets, territorial identities, and social justice, making them compatible with EU food system goals. They can entail civil society organisations, grassroots food initiatives, and direct markets. Such initiatives enable sustainable transformation through pragmatic action that is tailored to the regional food system, thereby benefiting community building, food education, diversifying local economies, and increasing resilience.

City-regions across Europe are increasingly addressing food system challenges at the city-region level through the introduction of urban food policies; this includes activities such as urban planning, educational activities, setting up food councils[5], reforming public procurement, and

[4] A community-based organisation where farmers and consumers create a network of mutual support, based upon shared values. According to Urgency org., 2,783 CSAs were operating in Europe in 2015.

[5] Food Councils are city-level coalitions that build connections across stakeholders which collaborate to improve CRFS.

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reducing food waste. This development is both driven and supported by the Milan Urban Food Policy Pact (MUFPP), a voluntary agreement among mayors committed to making urban food systems more sustainable, resilient, and equitable. The MUFPP focuses its efforts to support and foster food system sustainability specifically in the city region. It includes a framework made up of 37 recommended actions that are structured along six integrated themes: Governance; Sustainable Diets and Nutrition; Social and Economic Equity; Food Production and Urban–Rural Linkages; Food Supply and Distribution; Food Waste Reduction and Management. The last years have seen a trend of urban food strategies increasing and following the MUFPP themes; these trends may be partially attributed to the MUFPP and the accompanying policy discourse[15].

2.3 Scholarly responses

Food governance has been criticised by researchers for being fragmented, sector-based and inconsistent, with strategies failing to recognise system complexities and interdependencies[16] [17]. Issues identified as further complicating food system transformation are the position of food systems within multi-level governance contexts and across multiple overlapping systems, which leads to fragmentation of responsibilities across a broad range of actors[18] [19] [17]. Scholars call for the introduction of integrated food policies that go beyond the food production and consumption stages[20] [21] [22]. An integrated approach should address (1) cross-scale dynamics, (2) inequalities in food rights, (3) geopolitical and sectorial interdependencies, (4) power imbalance and low institutional capacities, and (5) conflicting interpretations of the concept of food security[17]. Local and city-focused approaches have received increasing attention in a response to address these issues more effectively.

The City Region Food System (CRFS) approach builds on the recognition of a lack of governance on the global level and focuses specifically on city-regions as the nexus of food system transformation. CRFS particularly focuses on the elements of (1) food access, (2) stimulating jobs and income, (3) resilience of the region and the food system, (4) improving the urban-rural linkage, (5) ecosystem and resource management; and (6) participatory governance. This has led to the view of the city as an innovation hub, and new food governance, that describes the emergence of new relations between the state, the market and civil society[23]. These developments are driven by the recognition of the vulnerability of European food systems, combined with the inability to increase resilience and safeguard food security. As a result, city-regions are a potential nexus to fill the vacuum left by the lack of integrated and coherent food policies[24] [25] [26].

3. Lessons from CRFS Living Labs

The inclusion of CRFS sustainability as a policy goal is increasing across cities and urban regions, as well as across research projects. CITIES2030 is an innovation action initiative under the Horizon 2020 research and innovation programme that utilises a living lab approach focusing on food system transformation across urban areas. The experience of Cities2030 living labs (Figure 1) will be assessed against current policies and scientific discourse of European food system governance. Living labs aim to activate stakeholders through local experimentation, social innovation, and public involvement. The Cities2030 labs have a lifecycle approach and, through intensive stakeholder involvement, utilise iterative feedback processes for co-creation, rapid

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prototyping, testing, and scaling up food system innovation and policy. Cities2030 brings together cities and regions across Europe with the aim to sustainably transform their food systems and experiment with new food policies and food innovations. To better describe and manifest the efforts of sustainable CRFS transformations, 10 thematic areas have been identified: production, processing, distribution, markets, consumption, food waste, food security, livelihoods and growth, inclusion and equity, and ecosystem services.

Figure 1 CITIES2030 Living Labs map

3.1 Perception of CRFS Sustainability

In addressing the concept of CRFS sustainability, the Living labs recognised the economic, social, and environmental elements of food system sustainability. Focus and activities were distributed across these elements accordingly and prioritisation has taken place in line with local CRFS-specific contexts. Awareness of the elements of food system sustainability is also recognised across CRFS' stakeholders and the general public. In addressing CRFS sustainability, city regions are driven to focus on food security and system resilience due to the COVID-19 pandemic and the war in Ukraine.

3.2 CRFS Sustainability in Living Labs

The CITIES2030 Living Labs employ a wide range of instrument types, a mix of non-voluntary and voluntary responses. Figure 2 below shows insights from Living Labs across four policy types, from non-voluntary to voluntary instruments[27]: regulatory instruments, urban planning, market-based, and informational and educational instruments. The mostly used instruments by Living Labs are informational and educational instruments (e.g., information campaigns, and events), and market-based instruments (e.g., local taxes and economic benefits). These voluntary policy types are easier to be introduced by the Labs compared to the regulatory and urban planning responses.

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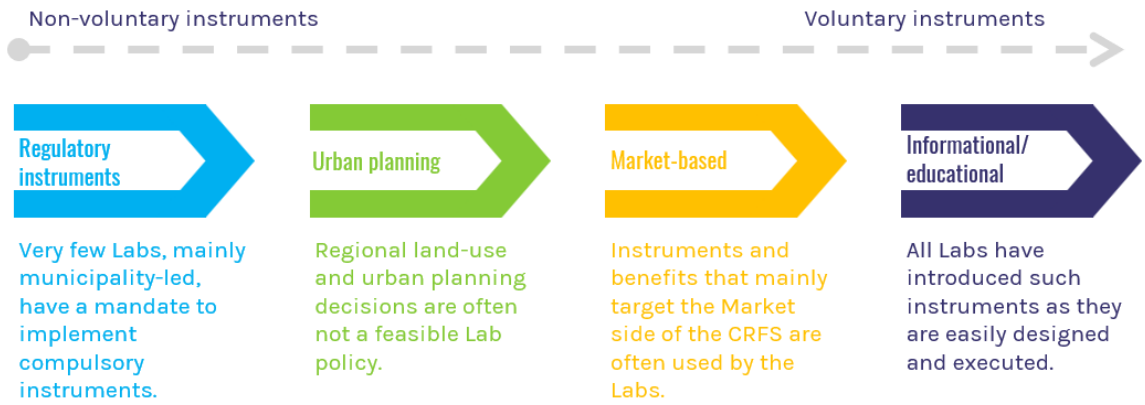

Figure 2 The four main Policy types

To get a better understanding of Living Lab's responses and priorities, the sub-section below presents their focused thematic areas, from the most to least addressed themes.

Health and sustainable consumption is a widely actionable goal across CRFS Living Labs. Efforts of the vast majority of Labs are directed towards a healthy food environment and in stimulating the consumption of healthy food. Lab activities include the development of regional plans and the development of educational programs in collaboration with primary schools. Special consideration is given to stimulating sustainable diets for children through the educational sector in several regions.

Food waste management is a common action across Living Labs, primarily driven by national or regional plans or strategies. Living lab activities address food waste reduction through informative campaigns and workshops aiming at public awareness-building. Living Labs are often secondary in affecting food waste management yet indicate that food circularity and food waste are becoming a priority area for CRFS actors.

CRFS **food production** is addressed infrequently across CRFS. This may be attributed to the limited availability and high prices of urban land or the limited mandate. Multiple initiatives are small-scale and aim for awareness-building rather than large-scale production. This lack of uptake, combined with city-regions' focus on increasing CRFS resilience, stresses the importance of strengthening the urban-rural relationships to support CRFS food production.

Food processing, distribution and markets are infrequently acted on across CRFS, despite being perceived as an area with the capacity to influence markets and containing high interest from the private sector. Living lab initiatives primarily focus on innovation uptake, process digitalisation and sustainable procurement processes in schools and public kitchens. Capacity building activities are directly linked to stimulating green procurement.

Social & cultural value of food and support of livelihoods are the least prioritised areas across the CRFS. This is a striking theme mentioned by several labs. Activities in this area aim at strengthening social cohesion and inclusion of weaker societal groups across CRFS in Northwestern Europe; tackling agricultural abandonment and supporting rural livelihoods across

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less urbanised Southern European CRFS and including gender equality issues. However, the social dimension of CRFS sustainability is mostly addressed by civil society. This disconnect between CRFS vision and prioritisation of action may be due to mandate, and power dynamics in the multilevel policy landscape. Food policy is in some CRFS traditionally addressed at higher (national and supranational) governance levels – which is also visible in the 'siloed' administrational structure of local city governments.

CRFS Living Labs aim to engage with a wide variety of stakeholders from different sectors. This multi-stakeholder approach provides leverage for mobilising local food policies and exploiting local innovation and knowledge. Food Councils are a prime example of how local stakeholders can influence CRFS governance.

All in all, in Figure 3 below, Living Labs' major activities and responses are placed on a Policy Matrix based on their voluntary or non-voluntary policy type and their top-down or bottom-up governance. The responses are also categorised upon the thematic areas (in different colours).

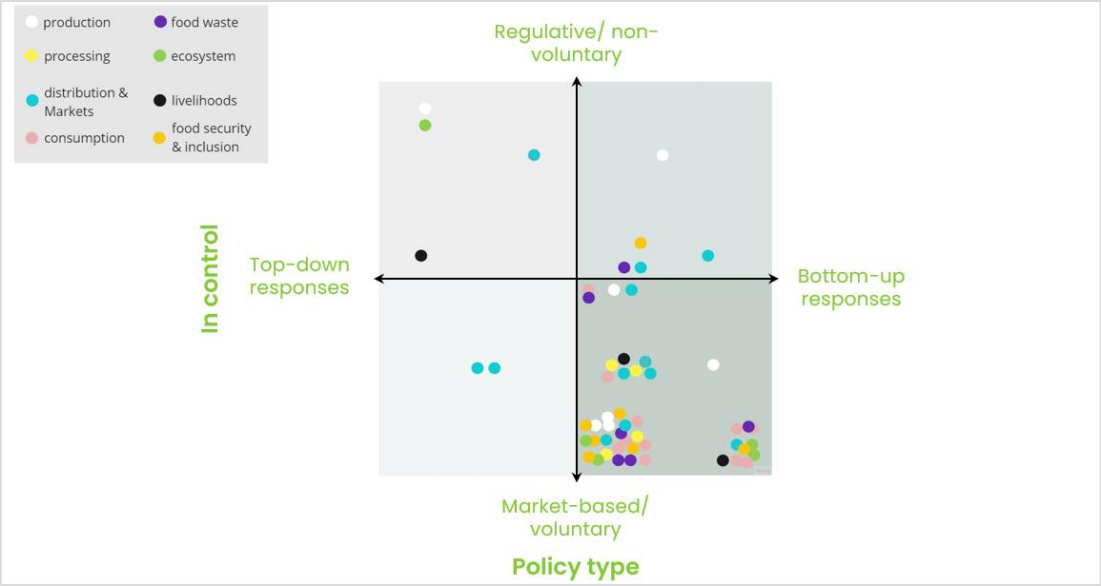

Figure 3 Cumulative Policy Matrix

4. Recommendations to sustainability in CRFS

4.1 Focus on the City-level

The CRFS approach is particularly suitable for city-level food system governance in Europe due to the fragmented and multi-layered character of European CRFS's. The approach is further supported by the rising proportion of European citizens in small and medium sized cities. These city regions are suitable for food system transformation using the CRFS approach due to their ability to include citizens and other stakeholders in the governance process, thereby increasing the uptake and acceptance of measures. City-regions of this size offer an adequate ground to

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scale up sustainable transitions that potentially impact greater European populations going forward. Living labs across European CRFS have demonstrated the diverse nature of urban regions and CRFS characteristics across Europe. Therefore, it is crucial for CRFS to design policies and innovative solutions that adapt to the CRFS, utilising place-specific tools while acknowledging the multi-level governance interdependencies.

4.2 Utilise a system thinking approach

Addressing the multilevel interacting challenges to reach sustainable food system transformation requires a system thinking approach. This approach requires a deep understanding of the complexity and interconnectedness of food system elements. Existing research shows that small and medium sized cities can enhance food security and urban resilience by adopting the CRFS approach[28]. However, evidence is needed to understand the food systems dynamics on that scale, and assess the multifaceted potentials of city-regions. Living labs play a central role in this process, but urban regions should continue to aim to couple local knowledge to EU strategies and academic research to evolve their CRFS specific solution development to identify best practices for sustainable CRFS development across Europe.

4.3 Increase system resilience

An increasing need exists for regional resilience and food self-sufficiency to withstand disruptions and dependencies. This is particularly true in the context of COVID-19, the energy crisis and the ongoing political tensions related to the war in Europe and their ripple effects. In order to reach system resilience, city-regions should focus on both ecosystem resilience (incl. efforts on (peri)urban biodiversity and green spaces, water and soil health) and social resilience (incl. health and social policies that embrace different food cultures and identities, and aim at equality in access to nutritious food). City regions should protect the CRFS capacity to diversify by sourcing resources from multiple regions, withstanding possible pressures and shocks in agricultural production and distribution, focusing on food autonomy, and supporting resilient agricultural systems.

4.4 Stakeholder inclusion

Under the call for sustainable transformation in the city-regions, there are calls for greater focus on multi-stakeholder and participatory governance. City-regions should try to merge stakeholders' expertise and knowledge, considering a cross-sectoral approach that goes beyond the traditional and static governance structures. Bringing diverse actors together to discuss and co-design policy responses and food interventions (e.g., via public-private partnerships) increases urban resilience and inclusivity and can lead to widely accepted and successfully executed interventions. The creation of organisations that actively engage and include public actors in CRFS governance is recommended, particularly Food City Councils, local or city government alliances, grassroots organisations, and citizen groups[29].

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4.5 Integrate food system transformation into EU policies

The EU is a well-suited level to stimulating CRFS governance due to its position above the nation-state and therefore allowing for a more widespread approach than a fragmented national approach. The EU strategies such as the F2F strategy have majorly influenced cities and Labs to gain a more system thinking approach when dealing with their CRFS and prioritise their activities according to the 3 pillars of sustainability. However, there is an increasing need for regional resilience and food self-sufficiency to withstand the disruptions and dependencies that the current context of the pandemic, the energy crisis, and the ongoing political tensions have brought to light. The European food system would greatly benefit from a policy framework that supports and protects the city-region food system in the form of a Common Food Policy.

An integrated EU food system approach should protect the city-regions' ability to create tailor-made solutions that engage local stakeholders and regional governments and inform actors through capacity building. Processes of transformative learning and best-practice sharing among cities should be stimulated.

5. Next steps & Conclusions

Creating a sustainable CRFS across Europe is a continuous and long-term process that will take place at multiple levels. An integrated food policy at the European level that adopts a system thinking approach is required to align actions across different policy areas. Simultaneously, city regions need to recognise their key role in transforming food systems and undertake robust policy and programme initiatives.

It is crucial to bridge the gap between public administration and governance levels, and design urban strategies under the CRFS approach aiming for a more collaborative multi-stakeholder governance. Living labs are a valuable source of information to activate stakeholders and identify best practices to support the transformation process toward sustainable CRFS across Europe.

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